

Case report

# Hanging without knot in the noose

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## Abstract

Death by hanging is believed to be a painless method of committing suicide. In most cases the noose has a knot and on this basis only it can be labeled as atypical or typical hanging. A 35 year Chinese man committed suicide by hanging with a ligature material made of electric wire where there was no knot present on the noose.

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## 1. Introduction

Hanging is a form of ligature strangulation in which the force applied to the neck is derived from the gravitational drag of the weight of the body or part of body.<sup>1</sup> It is almost invariably self-inflicted, either intentionally or accidentally. Homicidal hanging is extremely uncommon.

In the state of Western Australia during the period 1981–1987, there were a total of 183 suicidal hangings, together with one homicidal hanging. There were no documented autoerotic deaths. The suicide rate in Western Australia is approximately 12/100,000, and hanging comprises 16.4% of these deaths.<sup>2</sup>

Death in hanging is usually rapid and can occur even with partial suspension, due to asphyxia, cardiac inhibition, obstruction of cerebral arterial flow or venous drainage or, less commonly, in cases of a body drop, spinal cord injury.<sup>3</sup>

The perceived rapid nature of death in hanging makes it a commonly used method of suicide. Many reports rank hanging first, or at least second to drug overdose, among various methods of suicide.<sup>4,5</sup>

Although the incidence of suicide in general is said to have decreased in many countries over the past two dec-

ades, death due to hanging has maintained an increase.<sup>6,7</sup> This trend has been reported in certain sectors of the society, notably people of Asian descent—Indian, Chinese and Japanese.<sup>8,9</sup>

Hanging has been classified as typical or atypical depending upon the position of the knot in the noose. If a knot is present on the occiput it is designated as typical hanging or otherwise as the atypical hanging.<sup>10</sup> In this case there was no knot present on the ligature and it is presented as an unusual case of hanging.

## 2. Case report

An adult young Chinese male, aged about 35 years, was found hanging from the ceiling of the house. The ligature material was made of red coloured wire which had been used by the deceased in a U-shaped manner around the upper part of the neck, going both sides behind the ear. Thus there was no knot on the body of the deceased and the both arms of U-shaped ligature material were tied at the ceiling. The deceased was wearing spectacles which overlay the ligature material. There was a portable metallic ladder just behind the victim. The feet were not touching the ground and were about 1.5 feet away from the ground giving the impression of complete hanging. The height of the ceiling was about 10 feet from the ground (see Figs. 1–5).

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Fig. 1. Hanging with loop – right side view.



Fig. 3. Hanging with loop – back view showing entire body and ladder on the back.



Fig. 2. Hanging with loop – front view.

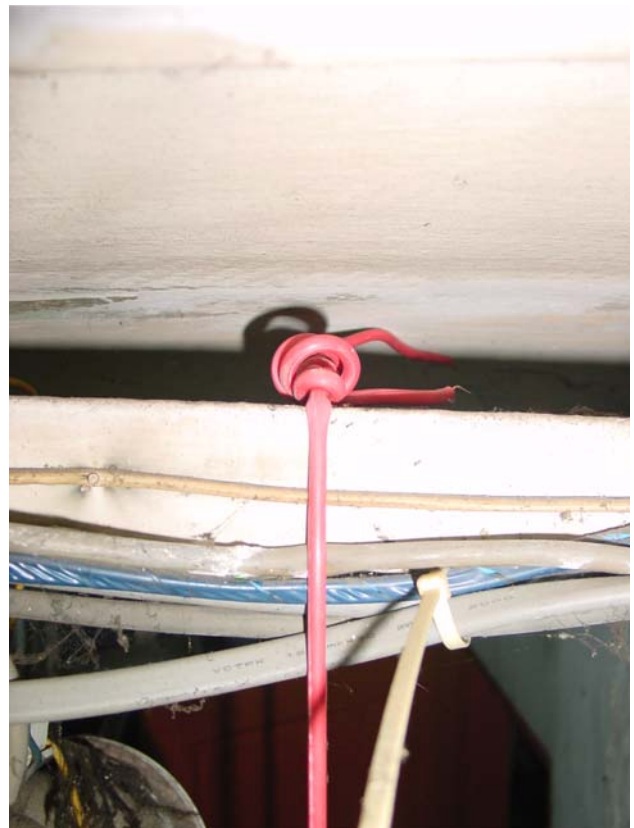


Fig. 4. Hanging with a loop – knot at the ceiling.



Fig. 5. Complete loop after removal.

### 3. Autopsy examination

The body was that of a well-nourished, medium-sized, tanned, muscular, adult Chinese male, 174 cm in length and 69 kg in weight.

The facial features were congested. The conjunctivae were pale and there were no petechiae. The tongue was congested and protruding from between the teeth and lips. All the finger nail beds were deeply cyanosed and small areas with ant bites were noted on the back of the body.

Rigor mortis was established with the many muscle groups being of variable rigidity. Post-mortem hypostasis was present on the back of the body and appeared more prominent in the lower half of both legs, consistent with suspension.

Significant decomposition was noted.

Parchmentized ligature mark was seen beginning from above the laryngeal cartilages, extending up and backwards in both right and left sides towards the angles of the jaw. From here the mark proceeded upwards behind both ears before vanishing in the areas of the temples. The ligature mark measured 54 cm in its entire length and 1 cm in width. The laryngeal cartilages, i.e. hyoid and thyroid cartilages were all intact and showed no evidence of fracture. The trachea and bronchi contained blood stained and frothy oedema fluid. The lungs were congested and oedematous.

The liver, kidneys and spleen were congested.

### 4. Discussion

The ligature and the knot may form a fixed noose or running noose. The course that the ligature takes to form a mark depends upon whether a fixed or running noose is used. A fixed noose is one in which the rope is knotted (granny knot, reef knot). A running noose is one in which the end of the rope is passed through the loop (slip knot). In the case of fixed noose, the two limbs of the noose near the knot will be pulled upwards assuming the shape of an inverted V. The ligature mark will therefore have a corresponding course often with a zone of unmarked skin at the apex of the V caused by the head falling away from the knot. In the case of running noose, the weight of the body will cause the noose to tighten mainly in the horizontal position. The ligature mark will therefore also be mainly horizontal but there may be an additional vertical mark caused by the suspending ligature.<sup>11</sup>

A simple loop is occasionally used<sup>12,13</sup> as in the present case. The common sites for the knot in the case of hanging are the right or left side of the neck, or at the occiput; suspension by a knot below the chin is rare.<sup>14</sup>

Ligatures are usually tied in the form of fixed loops with single knots, but the knots may be multiple.<sup>15</sup>

Commonly encountered hanging death is atypical type<sup>10</sup> where knot is away from the occiput and the marks are deeper and head is inclined opposite to the knot.

But when the knot of the ligature is over the occiput of the victim, it is designated as a case of typical hanging as is seen in judicial hanging. In such type of hanging, the ligature runs from the midline above the thyroid cartilage upwards along the lower border of the mandible on both sides of the neck to the occiput.

The position of the knot determines the force exerted on the neck by the ligature and it will be on the side opposite the point of suspension. The depth of the ligature mark will be more on the side of the neck opposite the knot.<sup>13</sup>

Here in the present case knot is neither on the occiput nor on the other part of the body. Rather it is in a U-shaped pattern producing deep seated ligature mark on the upper part of the front of neck as it is seen in the case of typical hanging.

Death in this case has been caused by occluding the air passage and the blood vessels. There is also the stretching of the neck which is commonly encountered in judicial hanging.

To conclude, this hanging death, though is a atypical one as per the definition (based on the situation of the knot) has the usual of typical hanging.

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